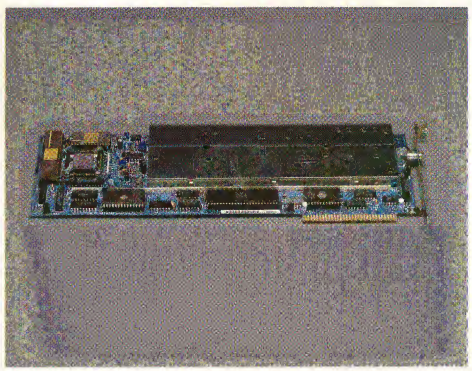
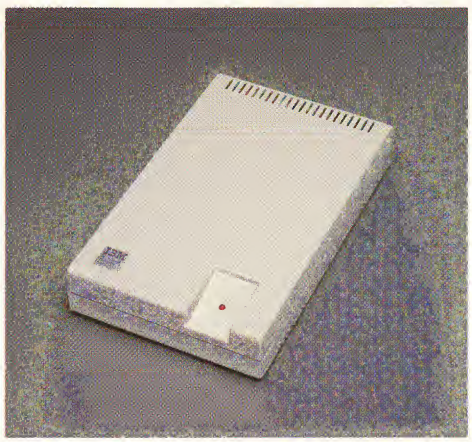
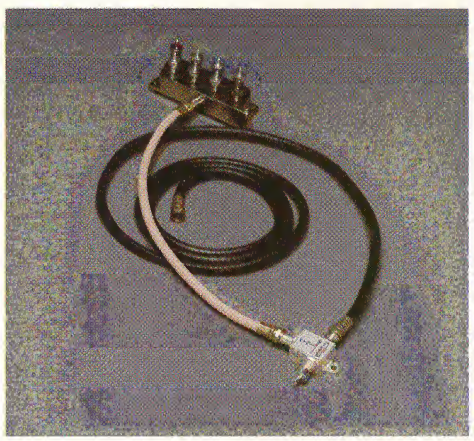
The IBM PC Network



Adapter



Translator Unit



Cabling Component

The IBM PC Network is a low-cost, broadband local area network designed to link together IBM Personal Computers. The IBM PC, PC XT, *Portable* PC and IBM Personal Computer AT can be connected to the network, which uses easy-to-install, highly reliable CATV coaxial cable and connecting hardware components. With IBM Personal Computers linked in the IBM PC Network, and appropriate software, users are able to:

- Share information, because data stored in one IBM PC can be transmitted quickly to any other IBM PC in the network.
- Type and send memos and messages to another networked IBM PC.
- Share hardware peripherals, such as a printer or fixed disk drive.

IBM PC Network hardware includes:

- IBM PC Network Adapter card for each IBM PC in the network.
- IBM PC Network Translator Unit, the central "switchboard" through which all transmitted data passes.
- IBM PC Network Cabling Components that tie the whole system together and also enable you to connect as many as 72 IBM PCs on the network at a maximum distance of 1,000 feet from the Network Translator Unit.

IBM PC Network Adapter

The IBM PC Network Adapter is a feature card that contains the circuitry for connecting a personal computer from IBM to the IBM PC Network. The IBM PC Network Adapter plugs into a system expansion slot on the System Unit.

Each IBM PC on the network requires an IBM PC Network Adapter card, which comes with a nine-foot attachment cable. This cable can be connected directly—or with up to 200 feet of additional cable—to the IBM PC Network Translator Unit or to an IBM PC Network Short-, Medium- or Long-Distance Kit.

Programming Interface

The IBM Personal Computer Network Adapter utilizes a Basic Input/Output System (BIOS) as the programming interface between the adapter and the IBM PC operating system. This BIOS, resident in the adapter's ROM, puts the unique features of a local area network into a standard format.

This high-level interface allows simplified programming using structured commands and return codes for control of the adapter. Using Direct Memory Access (DMA) for rapid data transfer between the IBM PC memory and the network, the BIOS provides the control function necessary to ensure high reliability and data integrity. Complete information on programming the IBM Personal Computer Network can be found in the IBM Personal Computer Network Technical Reference Manual.

Highlights

- Designed for the IBM PC, IBM PC XT, IBM *Portable* PC, and IBM Personal Computer AT (does not support the IBM PC*jr*)
- Fixed-frequency assignment for midsplit broadband
- Highly reliable, maintenance-free operation
- Extensive self-test and diagnostic capabilities
- Auxiliary processor to support high data rate
- Session layer protocol support
- Unique network identifier (48 bits)
- DMA or program-controlled data transfer
- Station bootstrap across network support

Technical data

- RF transmission speed: 2 M bits per second
- CSMA/CD access protocol
- Maximum distance to Network Translator Unit: 16,500 feet
- Maximum IBM PCs per network: 1,000
- Up to 16 active aliases per PC
- Up to 32 active sessions per PC
- Signal-strength tolerance: ±5dB
- Transmit/receive channels: 6 MHz each
- Transmit frequency (return): 50.75 MHz
- Receive frequency (forward): 219 MHz
- Intel 80188 microprocessor at 6 MHz
- 16KB x 8 RAM data buffers
- 8-bit parallel data path to System Unit
- DMA channel assignment: 3
- I/O address space: 360-367, 368-36F
- Interrupts: 2 or 3

IBM PC Network Translator Unit

The IBM PC Network Translator Unit is a compact electronic device–housed in a low-profile, durable aluminum casing–that transmits data among IBM PCs throughout the network. It provides broadband frequency translation from the return channel to the forward channel for the network.

The Network Translator Unit comes with a separately packaged transformer that powers the unit and plugs into a standard electrical outlet. It also comes with a connector assembly for attaching as many as eight IBM PCs within a radius of 200 feet. This assembly also has an expansion port for attaching the IBM PC Network Base Expander, which allows as many as 72 IBM Personal Computers to be linked in a single network.

Highlights

- Single-channel frequency translation
- Low-cost network entry
- Supports up to 72 IBM PCs within 1,000 feet of the Network Translator Unit

Technical data

- Detachable transformer cord
- LED power-on indicator
- Single "F" connector
- Interconnect assembly to support eight IBM PCs and expansion capabilities
- Maximum attachments: 256
- Translation bandwidth: 6 MHz
- Input frequency: 50.75 MHz
- Output frequency: 219 MHz
- Channel offset: 168.25 MHz
- Translator gain: 36dB
- Maximum distance to each IBM PC: 1,000 feet
- Data-only passive network

IBM PC Network Cabling Components

The IBM PC Network Cabling Components can extend the capabilities of the IBM PC Network. They enable the user to increase the maximum number of networked IBM PCs from 8 to 72 with a maximum distance of 1,000 feet from the Network Translator Unit.

These cabling components are designed with industry-standard "F" connectors, so they are easy to install.

IBM PC Network Cabling Components include:

- IBM PC Network Base Expander–connects the Network Translator Unit to 64 additional IBM PCs to be networked; supports the attachment of up to eight Network Short-, Medium- or Long-Distance Kits.
- IBM PC Network Short-Distance Kit–connects directly to the Network Base Expander; supports the attachment of up to eight IBM PCs at distances of up to 200 feet.
- IBM PC Network Medium-Distance Kit–connects to the Network Base Expander, at a distance of 400 feet, using separately purchased Network Cable Segments (see below); supports the attachment of up to eight IBM PCs at distances of up to 200 feet, for a maximum radius of 600 feet from the Translator Unit.
- IBM PC Network Long-Distance Kit–connects to the Network Base Expander, at a distance of 800 feet, using separately purchased Network Cable Segments (see below); supports the attachment of up to eight IBM PCs at distances of up to 200 feet, for a maximum radius of 1,000 feet.
- Network Cable Segments–
  –IBM PC 25-foot cable
  –IBM PC 50-foot cable
  –IBM PC 100-foot cable
  –IBM PC 200-foot cable

Highlights

- Easy to install
- Highly reliable, maintenance-free components
- "Enter-and-grow" capabilities
- Broad and highly flexible building coverage

Technical data

- 75 ohm coaxial cabling
- Maximum networked IBM PCs: 72
- Maximum radius: 1,000 feet
- Attenuation, forward path: 41.75dB ±4.5 (translator to any PC)
- Attenuation, reverse path: 41.75dB ±3.0 (translator to any PC)
- Isolation, PC to PC: 18dB minimum
- Return loss, any PC: 14dB minimum

All specifications subject to change without notice.

IBM®

OCRS: Office Correspondence Retrieval System (6024160)

Announced August 1984

Office Correspondence Retrieval System is a productivity tool which provides fast and convenient document retrieval. OCRS is made up of two major components; an automatic file abstractor (keyword selection) and a free-format request retrieval facility.

Automatic abstraction allows the user to file a document summary into OCRS without supplying keyword information such as date, subject, sender, etc. OCRS abstracts all of the relevant information and stores it in a summary file for use by the retrieval process. OCRS allows the user to add keywords beyond those actually contained in the document.

The retrieval process allows entry of search criteria using free-format query statements, which are then compared against words or groups of characters on file. A document search request can be entered as individual words or complete sentences. OCRS generates synonyms for some of the keywords requested to improve the probability of retrieving the appropriate document. A list of documents in order of most probable requested is returned. This free-format query capability eliminates the need to learn any special query language.

OCRS can abstract and retrieve any type of file containing ASCII text such as letters, charts, and computer programs. It can also directly abstract Writing Assistant documents, PCWriter documents and documents using the IBM Revisable Form Text Document Content Architecture (RFTDCA) data format. Documents can be converted to RFTDCA data format by DisplayWrite 1 and 2 and PCWriter.

OCRS can find files which are no longer online in the computer. Once a file has been summarized, the original text is not needed by the retrieval process. OCRS also makes it easy to maintain additional notes about a file (document), such as its physical location. In response to a query, OCRS will return a list of file names and corresponding notes which match the retrieval criteria.

Highlights

- Automatically generates summary of keywords from the text of the original document
- Users can locate documents (files) easily
- Free-format query extracts keywords from simple English
- Can keep track of documents no longer online
- Allows user to browse or print identified documents
- Easy to understand user interface
- A help window provides continuous user prompts based on cursor position (can be toggled off for experienced users)
- Online help screen provides additional help information
- Productivity tool for fixed disk users with many files
- Allows user selected color options
- Allows programs, dictionaries, etc. to reside in separate sub-directories
- Quick Reference Card
- Automatically uses synonyms to aid retrieval*
- Works with standard ASCII files including letters, charts, and computer programs
- Works with some nonstandard ASCII files such as those created by WORDSTAR®**
- Works with all IBM Personal Computer word processors including Writing Assistant, DisplayWrite 1, DisplayWrite 2, and PCWriter

Installation/Operation

First time users of OCRS will need to review the first section of the User's Guide to install the product.

OCRS needs a local fixed disk, or a high capacity diskette to store the summarized data for later searches.

Packaging

OCRS is distributed with the following:

- Two double sided diskettes containing the OCRS programs and dictionaries
- The OCRS User's Guide
- Quick Reference Card

Publications

OCRS is described in the Office Correspondence Retrieval System User's Guide.

Prerequisites

- One of the following IBM Personal Computers with at least a 128KB user partition (192KB RAM minimum with DOS):
  - —IBM Personal Computer or IBM Portable Personal Computer with expansion unit and fixed disk
  - —IBM Personal Computer XT
  - —IBM Personal Computer AT
- One diskette drive that can read a 360KB diskette is required to load the program on a fixed disk or high capacity diskette.
- One of the following:
  - —IBM Color Monitor
  - —IBM Monochrome Monitor
  - —IBM Amber Composite Video Monitor
  - —Other 80 column color or monochrome display An IBM color graphics or monochrome adpater as needed.

Customer Responsibilities

The customer is responsible for reading the OCRS User's Guide and following the installation procedures described.

Warranty

The standard IBM Program License Agreement provisions apply to this software product.

*Synonym information is based on the American Heritage Dictionary Data Base, Roget's II, The New Thesaurus, owned by Houghton Mifflin Company and used with permission. Copyright 1982 by Houghton Mifflin Company.

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